

Learning Unit 2: The Disciplines of the Built Environment

Architects :

- The word architect stems from the Greek words, 'arkhi' and 'tekton', meaning a 'chief creator', or a 'master builder'.
- Practicing architecture means providing services related to designing buildings and the environment around the site.
- Architects have to take into account not just the building itself, but the surroundings of the site that may affect the design and the layout of a building. Architectural design is always within a **context**, and must respond to it. It is not as simple as dreaming up a cool-looking building on an empty piece of land. A lot of thought goes into it.
- An Architect's responsibilities include ensuring that the buildings are safe, sustainable, functional, aesthetically pleasing, suit the needs of the building users and, are cost-effective.
- Now when we say cost-effective, it does not necessarily mean cheap. But rather, it is the most optimal and workable design solution, making the best uses of available resources, including of course, money.
- The process of architectural service normally starts when an architect receives the brief from the client or end user. The Brief is a statement of intention about what building they want to build on a given site - is it an office tower? A multi-family residence? A coffee shop?
- An architect will then do a thorough study of the site and the proposed building itself. They will often need to study even the clients themselves, via interviews or meetings – as sometimes the client themselves might not know exactly what they need or want. The architect therefor is often there to help the client envision what the real possibilities are, help them articulate that vision, and use that to inform the rest of the design process..
- Beyond the site context and the client, Architects often seek inspiration elsewhere to stimulate their creativity. Art, history, the natural world - these can all be rich sources of ideas that can inform architectural design.
- These ideas will then be conceptualized and translated into an elaborate design, including the building's internal spaces and exterior form, and even the site planning that is affecting the entire area of where the building sits.
- Architects offices often produce dozens of drawings to represent the as yet unbuilt work.
- These drawings will then be submitted to various consultants or agencies and to be used throughout the construction, up until the handing over and subsequently - even after a building is completed, for maintenance purposes for example.
- Therefore, architects are involved in all facets of the lifecycle of a building. This responsibility is huge.
- It is then apt to say that architecture is the art and science of designing, a very unique position in the domain of Built Environment.

Quantity Surveyors:

- How much will a project cost?
- Who will make sure the money invested in a project is being taken care of?
- This question can be answered by the Quantity Surveyors.
- A Quantity Surveyor, known casually as a QS, is among a few professionals in the building and construction industry who play an important role for the construction team. A QS is also a professional in the construction industry with experience in construction costs and contracts.
- The Quantity Surveyor is responsible in estimating exactly how much the materials, resources and equipment would cost in a development project from the beginning until the final stage.
- A price of a brick in the market? They can figure it out. Now how about a huge building using bricks as its main materials? They can calculate them.
- But, they are not merely calculators, they are also in charge of ensuring how to optimize a clients budget in completing a project.
- Loose furniture? Additional and hidden costs? Delivery and labour? These are also part of their expertise.
- In short, nothing escapes their eyes when it comes to the dollar and cents of a project.
- They are ensuring that the construction and production costs are handled as efficiently as possible.
- Nowadays, Quantity Surveyors also support the goals of sustainable development. It is not enough for a building project to have feasible economic costs , but rather energy costs and environmental costs also must be taken into account. This gives the QS an interesting opportunity to be involved in areas such as Green Costing, Life Cycle Costing / Life Cycle Assessment, Carbon Footprint assessment, Land Quality Reporting, Green Building Assessment and Building Information Modeling or BIM.
- The responsibility can be either for the client as a consultant or as an in-house worker or even on the contractor's side.
- They will even propose to the Architects and other consultants some alternatives in the design decision, to make sure all disputes and changes are being addressed carefully.
- The QSis involved actively as advisors in the legislation and contract administration of a project. Sometimes they would be involved as adjudicators, who make formal judgement on disputed matters in a development project.
- Although it may seem like quantity surveyors are only fit for the construction industry, in actual fact the job prospects are unlimited.
- There are quantity surveyors involved in other sectors of the industry such as oil and gas, telecommunications, property development, education, banking, manufacturing and even as advisors or consultants to legal and insurances companies.
- It is therefore crucial to look at the Quantity Surveyors as the custodians of the project funding, looking into what goes in and what goes out, to minimize differences by preserving everyone's interest in a project as much as possible.

Landscape Architect:

- The moment you step outside your door, you have left the building, but you are still in a space that has been designed and built. The Built Environment encompasses whatever transpires outside the structure of a building and on the exterior area.
- It may be a difficult notion to think of landscapes as a component of the built environment because much of the landscape seems at first glance to consist largely or entirely of natural materials - trees, hills, grass and streams.
- However, the outdoor spaces of the built environment are in fact the result of human design working with or within the natural environment.
- Landscape can be thought of as integrating the human, social, environmental, and technical aspects of the built and natural 'land'; and creating a setting or 'scape'. Land - Scape.
- People that work at the level of 'landscapes' are called Landscape Architects. Landscape Architects are intimately involved at the interface between nature and the built environment.
- The first person to call himself a landscape architect was Frederick Law Olmsted. He once said "I am less concerned with the disposition of the petunias as I am with the framing of the scheme". What he meant was that Landscape Architects are not focused on this or that flower, but instead, they have always designed within a variety of contexts at scales ranging from small, intimate gardens to large regional state or national parks.
- Landscape architecture projects have profound contribution to the quality of urban living, and creating spaces that are often among the most well-loved and frequently used portions of the city. .
- For example, Central Park in New York - designed by our friend Olmsted just now - or Perdana Botanical Garden in Kuala Lumpur - significantly contribute to the wellbeing of the urban occupants.
- Members of the landscape architecture profession addresses site selection, land preparation, planting design, grading, storm water management, environmental design, building construction, and ensuring landscape designs comply with current building codes and regulations. In the modern era of global climate change and extinction of biodiversity, landscape architecture play an important role in finding environmentally sustainable design solutions for the urban environment.

Town Planner:

- A town planner is the person who determines what is needed for a town and its citizens to thrive.
- They conceive and develop strategies including the planning of city structures as policies, zones, neighbourhoods, infrastructure, standards and building codes which they believe will benefit the most people in the most cost-effective ways.
- Town planners mitigate or avoid social, cultural, and environmental problems within the planned area.

Urban Designer:

- Town Planners and Urban Designers are related but different in fundamental ways.
- Urban designers are in charge on the creation of city features, including public space, infrastructure, transport, landscapes and community facilities.
- It is a creative role that focuses on designing individual features and elements of cities. Typically Urban Designers will have an architectural or landscape architectural background before specializing in urban design.
- To reiterate, Urban Designers focus on cities' design, features, systems and user experiences while Town Planners focus on the cities' strategy, technical, structure and policy.

Project Manager:

- A construction project is a complex process in nature, therefore it needs someone to manage.
- Project Managers are responsible for the planning, procurement and execution of a construction project in any undertaking that has a stated scope, a defined start and a defined finish.
- A project manager leads and manages the project team to run the project on a daily basis, with the authority and responsibility from the project board, from the planning, to building, and even to the marketing phase of the project.

Construction Manager:

- Construction managers on the other hand, usually plan and discuss cost estimates, budgets and work schedules on the construction phase alone.
- They will also choose suitable construction methods and strategies in a project.
- They explain and communicate contracts and technical information to staff and other professionals.

Building Surveyor:

- A Building Surveyor is a type of Chartered Surveyor engaged in all aspects of real estate and construction, from overseeing large mixed-use developments to planning domestic extensions.
- Building Surveyors are responsible for the maintenance, alteration, repair, remodelling and restoration of existing buildings.
- Building Surveyors offer professional advice on all factors affecting existing buildings, such as construction defects, alterations, renovations and extensions.

Civil Engineer:

- A civil engineer is a person conducting engineering-planning, designing, building, maintaining and running infrastructure while preserving public and environmental health and improving existing neglected infrastructure.

- A civil engineer is responsible for many aspects of a project, such as designing, planning, managing and generating construction jobs reports.

Contractor:

- A contractor is someone who employs or hires construction workers directly, or oversees construction work.
- He is responsible for supplying all the necessary materials, manpower, equipment (such as technical vehicles and tools), and services for the project construction.
- Contractors include subcontractors - any self-employed individual worker or company who conducts, operates or controls construction work.
- They must have the expertise, knowledge, experience and, where necessary, the organizational capacity to conduct the work safely and without health risks.
- In general, a contractor is preparing, implementing, supervising, inspecting and directing a construction project from start to finish irrespective of the project's scope.
- The contractor shall ensure that the project meets all the specifications set out in the contract documents.
- Contractors on all projects must:
 - a. ensure that the customer is aware of the customer obligations before any work starts
 - b. Taking into account the risks to anyone (including members of the public) that might be affected by it and the measures necessary to protect them.
 - c. Check that all of the employees they hire or nominate have, or are in the process of acquiring, the expertise, qualifications, training and experience to perform the job
 - d. Make sure that all the staff under their supervision have an acceptable, site-specific induction, unless the principal contractor has already done this
 - e. Provide sufficient monitoring, information and guidance to the employees under their monitoring
 - f. To ensure that they do not begin work on site until appropriate measures have been taken
 - g. To avoid unauthorized access to and maintain adequate welfare services for employees under their supervision from the outset.